

## Kenneth T. Christensen

---

### Professional Preparation

University of New Mexico	Mechanical Eng. ( <i>summa cum laude</i> )	B.S. 1995
California Institute of Technology	Mechanical Eng.	M.S. 1996
University of Illinois at Urbana-Champaign	Theor. and Appl. Mechanics	Ph.D. 2001
University of Illinois at Urbana-Champaign	Theor. and Appl. Mechanics	Postdoc. 2002

### Academic Appointments

**Professor** (Nov. 2020-date), Mechanical, Materials & Aerospace Engineering (Primary; 50%) and Civil, Architectural & Environmental Engineering (Secondary, 50%), **Illinois Tech**, Chicago, IL

**Viola D. Hank Professor** (2018-2020), **Professor** (2014-2018) and **College of Engineering Collegiate Chair in Fluid Mechanics** (2014-2018), Aerospace & Mechanical Engineering (75%) and Civil & Environmental Engineering & Earth Sciences (25%), **Univ. Notre Dame**, Notre Dame, IN

**World Premier Institute Principal Investigator** (2011-2020), Carbon Dioxide Storage Division, Int'l Institute for Carbon-Neutral Energy Research, **Kyushu Univ.**, Fukuoka, Japan

**Professor** (2012-2014), **Associate Professor** (2007-2012), **Kritzner Faculty Scholar** (2011-2014) and **Assistant Professor** (2004-2007), Mechanical Science and Engineering, **Univ. Illinois**, Urbana, IL

**Assistant Professor** (2002-2004), Mechanical Engineering, **Univ. New Mexico**, Albuquerque, NM

### Administrative/Leadership Appointments and Accomplishments

**Provost, Senior Vice President for Academic Affairs & Chief Academic Officer** (July 2022-date; interim for 11 months), **Illinois Tech**

- Providing leadership and oversight in the academic strategy, governance and operation of a top-100 university (#23 in 2024 WSJ Best U.S. Colleges rankings (#1 in IL); #98 in 2024 US News Best Nat'l U. rankings) with 7 academic colleges, 4 university-level institutes, 16 departments, 245 tenured/tenure-track, 130+ teaching, 30+ research and 250+ adjunct faculty members; 3,300+ undergraduate and 5,200+ graduate/professional students (500+ Ph.D. students); \$50 million in FY24 research awards (50%+ growth from FY23); \$40 million in FY24 research expenditures (18% growth from FY23).
- **Reporting Units**
  - Colleges: Armour College of Engineering; Chicago-Kent College of Law; College of Architecture; College of Computing; Institute of Design; Lewis College of Science & Letters; Stuart School of Business.
  - Administrative Units: Paul V. Galvin Library; Office of Academic Affairs; Office of Research; Office of Student Affairs; Office of Technology Services.
  - Institutes: Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship; Institute for Food Safety and Health (IFSH; an FDA Center of Excellence); Pritzker Institute of Biomedical Science and Engineering; Wanger Institute for Sustainable Energy Research.
- **Strategic Priorities and Accomplishments**
  - **Co-leading a fiscal, operational and digital transformation of Illinois Tech**
    - With senior leadership, implementing strategies and contingencies to address long-standing financial challenges and navigating associated challenges with the shifting higher ed landscape;

- Leading a transformation of the academic enterprise and partnering with Enrollment Management to enhance market position for strategic and diversified revenue growth (see below; **Unprecedented 23% enrollment growth from Fall 2022 to Fall 2023**; [link](#)).
- Co-chaired university-wide Cost Savings, Efficiencies and Growth Task Force in summer 2023 to assess spending, operations, and policies & procedures; Developed recommendations for right sizing financial structure and shifting from a survive to thrive mentality and reality;
- Rebuilt budget process in collaboration with Finance to implement a Zero-Based Budgeting (ZBB) approach that ensures line of sight focus on strategic and essential spending;
- With direct oversight of the Office of Technology Services and the CIO, leading a digital transformation that includes a complete restructuring of this organization as well as modernization of core systems/processes across critical university operations;
- Building a periodic academic program assessment to review program scholarly, fiscal and market health to ensure relevance and return on investment; Portfolio streamlining expected;
- Realized improvements in academic budgeting and spending in partnership with Finance.
- **Strategic fundraising & partnership building (examples)**
  - A \$5.5 million leadership gift from trustee, \$4 million in state funding and \$2.5 million in pending federal funds to realize a Student Fabrication Center – a 17,000 sq. ft. advanced manufacturing facility to meet curricular, co-curricular and industry partnership needs co-located with shared build space for student competition teams;
  - Launched the National Institute for Advanced Manufacturing with DMG Mori: Priorities include workforce and economic development and applied research innovation; ([link](#));
  - Established a 30k sf biotech research innovation campus in Chicago’s Fulton Market neighborhood which serves as the local hub for life science and biotech innovation ([link](#)).
- **Leading transformation of and innovation in the Academic Enterprise:** (a) enhancing in-person, on-campus learning experiences through technology-enabled pedagogical excellence, retention and job readiness and (b) expanding our portfolio of educational experiences in strategic ways to access a broader learner market in response to shifting demographics and workforce needs.
  - Hired inaugural Vice Provost for Learning Innovation and restructured the Center for Learning Innovation to transform rigorous student learning through technology enablement coupled with modern pedagogical best practices in residential, distance and lifelong learning;
  - Cultivating strategic partnerships to complement our academic excellence and amplify its impact as detailed below: Coursera (student marketplace, program hosting and initial program investment), Beacon Education (B2B student recruitment in China), and Collegis Education (rapid production of digital learning assets for Coursera programs);
  - Building digital catalog of modular learning assets across programs for seamless deployment in residential (flipped classroom, co-curricular training, ...), distance and life-long learning.
  - Curricular innovations (partial):
    - Launched the *Elevate your Future* initiative (August 2022): Marries education and experiential learning to support positive employment outcomes; UG students build a four-year plan of experiential learning activities that complement their degree program (research, virtual/physical internships, student competition teams, entrepreneurship, ...), amplified by mentorship, to ensure ample opportunities for applying their academic training in real-world settings to enhance career prospects upon graduation ([link](#)).
    - Launched five *Tech+* UG majors for on-campus learners (August 2023): Workforce-focused combined competency degree programs that marry two disciplines within a single, four-year undergraduate degree at 120-ish credit hours (Business/Engineering; Business/Psychology; Economics/Cybersecurity; ...; [link](#));

- Launched the *Discover+* initiative (August 2023): Allows on-campus freshmen to enter Illinois Tech as undecided majors and provides pathways to STEM majors through additional math and science support, or less math intensive Tech+ majors ([link](#));
- Launched four degree programs on the Coursera platform (August 2023) to expand our learner base to those that would not otherwise come to our campus and/or require flexibility to pursue education: Master of Business Administration (MBA); Master of Data Science; Master of Information Technology; undergraduate completion degree in Information Technology (Three-month faculty governance process; Four-month course development to launch first courses in August 2023; Nearly 1,000 learners already; [link](#)).
- Implemented a performance-based admissions approach for the Coursera initiative to ameliorate access barriers by allowing learners to showcase their ability through coursework success instead of the exclusivity of credentials-based admissions;
- Launched an online Mandarin translation MBA program in China (November 2022) with Beacon Education targeting working professionals (Over 1,500 learners already).
- Charged a task force with reimagining the university's core curriculum to ensure relevance and workforce readiness by emphasizing entrepreneurial mindset, design and innovation, data/computational literacy, leadership, and experiential learning ([link](#));
- Launched AI Engineering Master's with NIT-Trichy for working professionals ([link](#)).
- Infrastructure modernization/additions:
  - Launched new platforms to support a broader base of pedagogical needs and enhanced student success and retention: Canvas as the LMS across all learning modalities; EAB Navigate as a centralized student advising platform;
  - Leveraging professional advisors to enhance advising of UG and graduate students.
- **Prioritizing relevance-inspired, transdisciplinary research**, research commercialization, expanding research partnerships and modernizing support of the university research enterprise.
  - FY24 new research awards (\$50 million) up 50%+ compared to FY23 (\$33 million);
  - Supported establishment of the TechForward Initiative, including a \$6 million NSF Accelerating Research Translation Grant to promote campus research translation and commercialization ([link](#));
  - Proactively engaging Illinois Tech in multi-university/regional research partnership discussions (versus past practice of waiting to be invited). Wins from this approach include:
    - Midwest Alliance for Clean Hydrogen: one of seven hydrogen hubs named by DOE ([link](#));
    - Midwest Microelectronics Consortium: inaugural DOD microelectronics commons;
    - Greatlakes RENEW: one of ten inaugural NSF Regional Innovation Engines ([link](#));
    - Midwest Wireless Innovation Strategy Development Consortium: EDA Tech Hub ([link](#)).
  - Appointed the inaugural University Liaison to the National Labs to promote more substantial and longer-term collaborations with Argonne and Fermi Labs as well as other government labs (research collaborations, joint appointments, workforce development opportunities, ...);
  - Comprehensive research infrastructure assessment, planning and renewal:
    - In partnership with Facilities and External Affairs, secured \$17 m in state funding to address critical and strategic research facility needs;
    - Based on a strategic assessment of campus-wide wet-lab needs, Illinois Tech launched a biotech research innovation campus in Chicago's Fulton Market neighborhood of which serves as the local hub for life science and biotech innovation ([link](#));
  - Pursuing Carnegie Classification for Community Engagement in the 2026 application cycle;
  - Commissioned an external assessment to address how the research enterprise support structure must adapt/grow to facilitate a doubling of research expenditures in the next five years on a path towards R1 designation and robust compliance. Remedial actions underway.

- **Co-leading university efforts to become a Hispanic-Serving Institution (HSI):** Expect to apply soon (Fall 2024 UG Hispanic enrollment at 27.3%); building support structures and community mindset to ensure student retention, success and employment.
- **Restructuring Office of the Provost** to better serve the current and future needs of the academy and addressing dean-level vacancies with leaders aligned with university aspirations and goals.
  - Standardizing faculty processes related to hiring, promotion/tenure, development, etc., to promote inclusive excellence and enhance diversity;
    - Appointed the inaugural Vice Provost for Faculty Affairs to ensure direct oversight of faculty processes as well as comprehensive mentorship and development;
    - Launched the Interfolio platform to support faculty hiring, reporting and annual review;
    - Developing a formal faculty post-tenure review process for equity and performance.
  - Appointed the inaugural Vice Provost for Operations tasked with restructuring the Office of the Provost to better meet the needs of the academic enterprise (hired three new staff);
  - Appointed the inaugural Vice Provost for Academic Strategy to help develop and execute large-scale, interdisciplinary campus initiatives;
  - As noted above, appointed the inaugural Vice Provost for Learning Innovation and inaugural University Liaison to the National Laboratories;
  - Launched the Academic Impressions platform as a tool for faculty development, supervisor training, academic leadership training and search and P&T committee training.
  - Restructuring the Vice Provost for Academic Affairs role to Vice Provost for Academic Success and Retention to align with institutional commitment to student success;
  - Rectified issues with personnel expectations/performance/accountability.
  - Recruited and hired three deans; launched business, computing, law and engineering dean searches.

**Carol and Ed Kaplan Dean** (Nov. 2020-July 2022), Armour College of Engineering, **Illinois Tech**

- Led strategy, governance and operation of a college of 5 departments, 78 tenured/tenure-track, 11 teaching, 6 research and 30+ adjunct faculty members; 15 administrative and 5 technical staff members; 1300+ undergraduate students (across 11 majors); nearly 600 Master's students (both professional and research-based); nearly 200 Ph.D. students (in sum, over one-third of Illinois Tech total student body); nearly 30,000 annual student credit-hours taught; \$12.25 million in FY22 research expenditures; \$13.7 million in FY22 research awards; ~\$18.5 million annual operating budget, ~\$2.38 million in recurring endowment income.
- **Strategic Priorities**
  - [College strategic vision](#) developed and led by faculty and staff (Fall 2022 rollout);
  - Recommitted to student recruitment (including enrollment growth), success and retention;
  - Reimagined the *Armour Engineer of Tomorrow* through curricular renewal that emphasizes an entrepreneurial mindset and industry-relevant activities with a team-based, practice-based focus;
  - Full-scale infrastructure renewal for both research and educational missions;
  - Built relationships with Armour College alumni and friends, industry, research entities, city/state government, community colleges, and broader community to establish impactful partnerships;
  - Strategic faculty recruitment, development and retention to promote inclusive excellence, enhance diversity and catalyze pillars of research strength to realize growth and impact;
  - Fostered a renewed sense of community and inclusivity that promotes collaboration and shared successes, mitigates silos and celebrates the excellence of our students, faculty, staff and alumni;
  - Initiated \$200-250 million *Armour College Renaissance* fundraising campaign to support priorities.

- **Accomplishments**

- Reimagined Armour College leadership team to better support its broad spectrum of activities: Added an additional Associate Dean position and aligned one position around undergraduate affairs and the other around graduate affairs; Added two Associate Department Chairs per department similarly focused around undergraduate and graduate affairs to provide more robust oversight of academic programs at the department level; Reimagined duties of college Director of Student Success to focus on broad needs in support of student academic success; Established college-level committees on Undergraduate Affairs (Assoc. Dean, five Assoc. Chairs and Director of Student Success) and Graduate Affairs (Assoc. Dean and five Assoc. Chairs) to streamline oversight and promote cross-department collaborations and sharing of best practices.
- Reconstituted dormant Armour College Board of Advisors with a diverse membership to promote advice and partnership in achieving growth and impact; Has yielded \$4.5 million in benefaction.
- Initiated a strategic planning process with a 12-person committee consisting of next-generation leaders in the college (associate professors and full professors within 5 years of promotion; includes both TTT and teaching faculty).
- Built internal and external relationships to realize new interdisciplinary, industry-relevant and innovation-focused activities in support of student success, to address workforce needs and to catalyze larger-scale research efforts.
- Secured ~\$13 million in benefaction (in 18 months as Dean) to support college needs (incl. \$2 million for academic infrastructure improvements); in-kind equipment donations also pursued.
- Advocated for and organized a September 2021 Armour College Summit (called by President, Provost and Chair of Illinois Tech Board of Trustees) of Armour-centric University Trustees and other key friends of Armour College to discuss the need for comprehensive overhaul of Armour College infrastructure in support of a comprehensive renewal of excellence for Armour College; served as kickoff for \$200-250 million *Armour College Renaissance* fundraising campaign.
- Launched the *Armour Academy for Experiential Learning and Student Success* – a support system meant to enhance the career readiness of our undergraduate students via planning of experiential learning opportunities while also providing a four-pronged advising structure to enhance outcomes and retention (professional advisor; peer advisor; faculty mentor; industry mentor). \$100k recurring investment to support the hiring of two professional advisors (two professional advisors to be added each year for next three years).
- Established enhanced faculty/staff recruitment and development approaches: Forging authentic relationships with and broadening our pool of diverse faculty/staff candidates; Requiring diversity, equity and inclusion statements in faculty applications and implicit bias training for all search committees; Instituted a new annual review process for untenured assistant professors to better support their development; Standardized format and content of promotion and tenure dossiers across the college; Promoting faculty mentoring networks; Proactively nominating faculty for external awards, society fellowships and internal honors; Organized and executed faculty/staff workshop on student mental health and implicit bias in the classroom.
- Established a professional development series for all untenured assistant professors to explore common challenges and opportunities, and for cohort building; includes more direct mentorship for writing NSF CAREER and other young investigator proposals.
- Initiated a number of college-level community and inclusivity-building initiatives, including: A new Armour Weekly newsletter to broadly share the successes of our students, faculty, staff and alumni as well as department, college and student organization activities to foster cross-department interactions; Dean's Distinguished Lecture Series to promote interdisciplinary activities and highlight the successes of our alumni base; Established a new series of

faculty/staff/graduate student awards to celebrate Excellence in Research, Teaching, Service and Advising as well as TA duties.

- Emphasized efficiency and financial sustainability/stewardship in all college processes and formalizing several *ad hoc* ones.
- Rectified isolated issues with faculty and staff expectations/performance/accountability.
- Prioritized faculty/staff/student diversity, professional & leadership development in all activities.

**Provost's Fellow (2017-2019), Office of the Provost, U. Notre Dame**

- Faculty input into key activities of the Provost's office, including regular Provost Cabinet Meetings.
- Explored approaches for streamlining oversight of fabrication facilities; developing organizational structure and information hub for all fabrication resources and facilities at Notre Dame.

**Department Chair (July 2017-Oct. 2020), Aerospace & Mechanical Engineering (AME), U. Notre Dame**

- Leading strategy, governance and operation of a department of 34 tenured/tenure-track, 5 teaching and 6 research faculty members; nearly 600 AE and ME undergraduate students (32% of COE); 142 graduate students (almost all Ph.D.; 25% of COE); \$18.5 million in FY19 research expenditures (Top department at ND; 31% of COE); \$24.7 million in FY19 new research awards (Top department at ND; 37% of COE); ~\$6.5 million operating budget, plus ~\$2 million in recurring endowment income.
- **Organizational and Operational Excellence**
  - Reimagined roles of Chair, Associate Chair, Director of Undergrad. Studies (DUS), Director of Grad. Studies (DGS) and Dept. Administrator to reemphasize vision, strategy and excellence.
  - Established the *AME Leadership Team* (Chair, Associate Chair, DUS and DGS) to ensure a transparent, collaborative and sustainable AME leadership environment.
  - Emphasizing efficiency and financial sustainability/stewardship in all departmental processes;
  - Established a single faculty hiring committee: Four new hires in AY2017-18 cycle; multiple hires expected in AY2019-20 cycle (COE hiring freeze in AY2018-19).
  - Initiated the development of a rolling, multi-year teaching plan;
  - Formalized several *ad hoc* departmental processes;
  - Rectified isolated issues with faculty and staff expectations/performance/accountability.
  - Prioritizing faculty, staff and student diversity and leadership development in all activities.
- **Faculty Development**
  - Leading annual review of all untenured faculty members (formal letter and individual meeting), and tenured associate professors (meeting) as well as all teaching and research faculty (meeting).
  - Oversaw onboarding of 12 tenured/tenure-track, two research, and two teaching faculty hires.
  - Successfully supported seven tenured/tenure-track faculty through P&T process, four more through reappointment (mid-tenure review), and one teaching faculty through full promotion.
  - Instituted enhanced faculty development approaches: Routine peer teaching review for and annual Committee on Promotion, Reappointment and Tenure (CRPT) discussions of all non-full professors; tenured associate professor annual review meetings; faculty mentoring networks; proactively nominating faculty for external awards, society fellowships and internal honors.
  - Six assistant professors on-boarded during chair tenure awarded NSF CAREER/DOD YIP grants.
- **Diversity and Inclusion**
  - Serving a prominent role in a college-wide effort to ensure equitable and inclusive on-ramps to the curriculum for all entering undergraduates, particularly for first-generation and underrepresented students, as well as those who enter with little or no AP credit.
  - Forging authentic relationships with and broadening our pool of diverse faculty candidates.
  - Reserving a subset of department seminars to host select female and underrepresented minority Ph.D. students and postdocs on campus.

- Aggressive participation in COE Future Faculty Workshop (A professional development opportunity for female and underrepresented external graduate students and postdocs to explore the faculty hiring process and learn about opportunities at Notre Dame).
- **Strategic Planning and Implementation (Including engagement with external stakeholders)**
  - Developed a Strategic Plan with faculty in AY2018-19; implementation underway.
  - Led Provost-mandated department external review process; additional resources expected.
  - Led successful ABET review for both AE and ME degree programs in AY17-18.
  - Emphasizing collaborative teaching endeavors with the other four COE departments.
  - Developed a more intentional department communications and marketing strategy to enhance external visibility and recognition (periodic e-newsletters, targeted mailings, enhanced Twitter and LinkedIn presences, ASEE First Bell advertisements, etc.).
  - Modernizing the Ph.D. program: new qualifying exam; fewer courses required; broadened the range of courses that satisfy these requirements; enhanced professional development activities.
  - Brought AY16-17 plan to improve undergraduate design/lab experiences to fruition: Led to Aug. 2018 opening of *AME Student Fabrication Lab* and new teaching labs (Advocated for \$400k & new space from COE (supplemented \$100k by AME); Secured additional \$500k in benefaction and ~\$200-250k in no-cost equipment leases from industry since June 2018).
  - Leading college-wide *Engineering Innovation Hub* initiative to transform undergraduate hands-on learning experiences (**Goal:** Create showcase to support industry-relevant infrastructure and learning experiences and to promote innovation/entrepreneurship; Collaboratively secured ~\$9 million in benefaction, as well as \$6 million in grant and \$3.1 million in internal funds; A foundational aspect of grant from Lilly Foundation to promote regional industry partnerships).
  - Member of ND steering committee tasked with developing connections with regional industry and community to promote innovation and economic development (culminated in ~\$40 million grant from Lilly Foundation to establish/cultivate educational and research connections).
  - Leveraging Industrial Advisory Board as ambassadors for department in seeking benefaction to support on-going curricular activities and development of partnerships with industry.

**Assistant Dean of Faculty Development (2015-2017), College of Engineering, U. Notre Dame**

- Explored all aspects of junior faculty mentoring and development to enhance retention and success.
- Designed and executed a series of professional development luncheons with all untenured COE faculty to explore common challenges and opportunities, and for cohort building.
- Planned and executed a STEM Teaching Workshop for faculty in the Colleges of Engineering and Science and a Junior Faculty Mentoring Workshop for senior faculty in the COE.
- Served as member of COE Executive Committee, the governing body of the College.
- Participated in COE-level promotion/tenure discussions and recommendations.

**Associate Head for Mechanics Programs (Aug. 2012–May 2014) and Associate Head for Undergraduate Programs (Jan. 2013–May 2014), Mechanical Science and Engineering, U. Illinois, Urbana**

- Member of Mechanical Science and Engineering (MechSE) Leadership Team.
- Involved in all aspects of departmental governance and major departmental decisions (hiring, promotion/tenure, mentoring/salaries of faculty/staff; space allocation; strategic planning).

**As MechSE Associate Head for Mechanics Programs:**

- Led all aspects of M.S. and Ph.D. programs in Theoretical and Applied Mechanics.
- **Key Accomplishments**
  - Expanded the breadth elective course options for TAM Ph.D. students.
  - Recalibrated Ph.D. Qualifying Exam timing to improve time to degree.
  - Led ad hoc committee on development of a COE Fluid Mechanics Instructional Laboratory.



**As MechSE Associate Head for Undergraduate Programs:**

- Led all aspects of Mechanical Engineering (ME) and Engineering Mechanics (EM) degree programs: ~1000 students (freshman through senior; ~900 ME, 100 EM majors; ~180 ME, 30 EM degrees/yr.)
  - Administered B.S. degree programs in ME and EM: Chair of Undergraduate Programs Committee; Departmental representative for all COE undergraduate matters; Oversaw faculty advising activities; Formulated faculty teaching assignments; Led all ABET-centric activities; Supervised administrative staff of five individuals and four teaching faculty members.
  - Led strategic planning and execution in curricular matters and student experiences.
  - Oversight of student-centric activities: recruitment, scholarships, awards, capstone design, etc.
- **Key Accomplishments**
  - Co-led successful ABET review for both ME and EM degree programs in AY13-14.
  - Led the development of a strategic plan for transforming hands-on learning experiences; Led to the establishment of *MechSE Innovation Studio* (student fabrication space) and new laboratory experiences (Secured \$1 million initial COE investment; \$500k/yr. for four additional years).
  - Co-led initial planning process for renovation of and a 25,000 ft<sup>2</sup> addition to the Mechanical Engineering Building, the latter for student-centric academic and co-curricular activities.
  - Member of initial COE committee tasked with exploring integration of entrepreneurship into undergraduate activities (Eventually resulted in a dual B.S. degree pathway in Innovation, Leadership and Engineering Entrepreneurship for undergraduates).
  - Oversaw integration of new teaching modalities into 2<sup>nd</sup>-year COE mechanics service courses.

**Associate Director** (2011-2014), Int'l Inst. Carbon-Neutral Energy Research (I<sup>2</sup>CNER), **U. Illinois, Urbana**

- Provided local leadership and organizational oversight (staffing and budgetary) to a cohort of 10-12 Illinois faculty that formed a Satellite Center (\$2 million/yr.) of the much larger (\$20 million/yr.) I<sup>2</sup>CNER initiative funded by the Japanese government; led by Prof. Petros Sofronis (Illinois faculty).

**Leadership and Professional Development Activities**

- **Certificate**, Leading for Equity, Diversity and Inclusion in Higher Education (Coursera through University of Michigan), 2020
- **Invited Participant (3-5 invitees from each school)**, 2<sup>nd</sup> Atlantic Coast Conference (ACC) Academic Leaders Network (cultivate the next cohort executive-level leaders at member schools), 2019-20
- **Invited Participant (one of fifteen invitees)**, 3<sup>rd</sup> Notre Dame LEAD Program (develop the next cohort of academic leaders at ND), Univ. of Notre Dame, 2015-16
- **Invited Participant (one of fourteen invitees)**, 4<sup>th</sup> College of Engineering Faculty Leadership Forum (develop the next cohort of college leaders), Univ. of Illinois, 2013-14
- **Academy for Excellence in Engineering Education (AE<sup>3</sup>) Scholar**, Univ. of Illinois, 2004

**Major Awards and Honors**

- **Distinguished Alumni Award**, School of Engineering, Univ. of New Mexico, 2022
- **Distinguished Alumni Award**, MechSE Dept., Univ. of Illinois, 2022
- **Carol and Ed Kaplan Endowed Deanship**, Armour College of Engineering, Illinois Tech, 2020-2023
- **Viola D. Hank Endowed Chair**, College of Engineering, Univ. of Notre Dame, 2018-2020
- **Fellow**, American Association for the Advancement of Science (AAAS), 2017
- **Gustus L. Larson Memorial Award** (for achievements in mechanical engineering within 10-20 years following graduation), Pi Tau Sigma and American Society of Mechanical Engineers, 2016



- **Collegiate Chair in Fluid Mechanics**, College of Engineering, Univ. of Notre Dame, 2014-2018
- **Invited Participant**, NAE EU–US Frontiers of Engineering Symposium (EU–US FOE), 2013
- **Fellow**, American Physical Society (APS; Division of Fluid Dynamics), 2013
- **Fellow**, American Society of Mechanical Engineers (ASME), 2012
- **Dean’s Award for Excellence in Research**, College of Engineering, Univ. of Illinois, 2012
- **Kritzer Faculty Scholar**, MechSE Department, Univ. of Illinois, 2011-2014
- **François Frenkiel Award for Fluid Mechanics**, APS Division of Fluid Dynamics, 2011
- **Arnold O. Beckman Research Award**, Campus Research Board, Univ. of Illinois, 2011
- **Associate Fellow**, American Institute of Aeronautics and Astronautics (AIAA), 2010
- **CAREER Award**, National Science Foundation (NSF), 2007
- **Young Investigator Award**, Air Force Office of Scientific Research (AFOSR), 2006
- **Ralph Powe Junior Faculty Enhancement Award**, Oak Ridge Assoc. Univ., 2003

### Editorships

- **Editorial Board**, *Measurement Science and Technology* (IOP), 2011-2016; 2022-2024
- **Editor-in-Chief**, *Measurement Science and Technology* (IOP), 2017-2021
- **Editorial Advisory Board**, *Exp. Fluids* (Springer), 2012-2024
- **Editorial Board**, *IOP SciNotes*, 2019-2023
- **Special Issue Editor** from the PIV 2017 Symposium, *Measurement Science and Technology*, 2017/18
- **Special Issue Editor** from the PIV 2015 Symposium, *Measurement Science and Technology*, 2016/17
- **Guest Editor**, Focus Issue on Uncertainty in PIV, *Measurement Science and Technology*, 2015
- **Associate Editor**, *Journal of Visualization* (Springer), 2014-2017

### Teaching Awards and Honors

- **List of Teachers Rated Excellent**, Univ. of Illinois, Fall 2006-08, 2010; Spring 2006-07, 2009, 2011-12

### Other Awards and Honors

- **Cover article** (research on secondary flows and vortex structure associated with interacting barchan dunes), *J. Geophys. Res.-Earth Surface* (vol. 125, No. 2), 2020
- **Editor’s Choice Award** (research on hyperheic flow in coarse-grain streambeds), *Water Resour. Res.* (vol. 54, No. 5), 2018
- **Cover article** (research on flow associated with interacting barchan dunes), *J. Geophys. Res.-Earth* (vol. 123, No. 9), 2018
- **Plenary Lecture**, 1<sup>st</sup> International Symposium on Image-Based Metrology, Honolulu, HI, 2016
- **Keynote Lecture**, I<sup>2</sup>CNER Tokyo Symposium: Japan–U.S. Collaboration on Energy (Sponsored by US Embassy), 2014
- **Keynote Lecture**, 16<sup>th</sup> International Symposium on Flow Visualization, Okinawa, Japan, 2014
- **Cover article** (research on microvascular multinozzle printing arrays), *Adv. Mat.* (vol. 25, No. 1), 2013
- **Keynote Lecture**, American Institute of Chemical Engineers Annual Meeting, 2012
- **Keynote Lecture**, I<sup>2</sup>CNER Tokyo Symposium: Japan–U.S. Collaboration on Energy (Sponsored by U.S. Embassy), 2012

- **Arnold O. Beckman Research Award**, Campus Research Board, Univ. of Illinois, 2011
- **François Frenkiel Award Lecture**, 64<sup>th</sup> American Physical Society Division of Fluid Dynamics Meeting, 2011
- Research on rough-wall turbulence highlighted in *AIAA Aerospace America Year in Review* (December issue, pg. 15), 2010
- **Cover article** (research on pediatric ventricular assist device), *Journal of Biomechanical Engineering* (vol. 132, No. 7), 2010

#### Awards and Honors as a Graduate Student

- **Stanley J. Weiss Outstanding Thesis Award** (TAM, UIUC), 2001
- **Larson Graduate Fellowship** (TAM, UIUC), 2000
- **SURGE Fellowship** (COE, UIUC), 1996-2000
- **Clark B. Millikan Fellowship** and **Special Institute Fellowship** (Caltech), 1995
- **NSF Graduate Research Fellowship**, 1995-1998
- **Ford Foundation Predoctoral Fellowship** (declined to accept NSF Fellowship), 1995

#### Invited Higher Ed Panels, Podcasts and Webinars

- Northern Trust Hispanic Heritage Month Panel, October 2020.
- Northern Trust Invited Webinar, “Leading Multi-Generational and Multi-Cultural Teams,” June 2021.
- CDW Invited Webinar, “Leading Multi-Generational and Multi-Cultural Teams,” August 2021.
- Illinois Tech Hispanic Heritage Month Latinos/Latinas in STEM Panel (moderator), September 2021.
- [Enhancing Degree Value and Career Readiness for Learners Keynote Panel](#), Coursera Conference, April 2023.
- Elevate and How Job Readiness is Critical to Expanding Accessibility in the Modern Economy Session, Times Higher Education Digital University\_US Summit, May 2023.
- [Building Learner First Degrees Webinar](#), Coursera, June 2023.
- Institutional Investor Ecosystem Impact Panel, Angeles Investors Q3 Summit, August 2023.
- International Market Opportunities Panel, [P3•EDU](#), Innovation and Public-Private Partnership in Higher Education, September 2023.
- Revolutionizing Learner Pathways and Degree Outcomes with Industry Certificates Webinar, Coursera, September 2023.
- “[Educate, Empower and Elevate](#),” Education and Empowerment Podcast, 4stay, November 2023.
- [Lab Rats to Unicorns](#) Podcast with John Flavin (Portal Innovations, Chicago), January 2024.
- Innovative, Student-Centric Ways to Grow Enrollment Panel, [New Start Summit](#), February 2024.
- Fostering International Collaboration in Higher Education for Global Impact Panel, 2024 International Business Horizon [INBUSH Era World Summit](#) (India), February 2024.
- Hispanic-Serving Institution (HSI) Innovators Panel, Angeles Investors Q3 Summit, August 2024.
- Invited Speaker, Provost Summit: Leading for Innovation and Growth (Academic Impressions, Denver), September 2024.

- “Artificial Intelligence: Implications and Applications of AI in Higher Education” Panel, Executive Leadership Symposium of the Hispanic Association of Colleges and Universities (HACU) 38<sup>th</sup> Annual Conference (Denver), November 2024.

### **Professional Memberships and Associated Service**

- **Fellow**, American Physical Society (Division of Fluid Dynamics; member since 1996)
  - **Member**, DFD Fellowship Committee, 2017-2019
  - **Member**, DFD ad hoc Committee on Frenkiel Award, 2016
  - **Chair**, DFD External Affairs Committee, 2016-2017
  - **Vice-Chair**, DFD External Affairs Committee, 2015-2016 (administered travel and child care grant applications processes for 68<sup>th</sup> APS-DFD Meeting)
  - **Member**, DFD External Affairs Committee, 2014-2015
  - **Member**, DFD Frenkiel Award Selection Committee, 2012-2013
- **Fellow**, American Society of Mechanical Engineers (member since 1999)
- **Fellow**, American Association for the Advancement of Science (member since 2013)
- **Associate Fellow**, American Institute of Aeronautics and Astronautics (member since 1994)
  - **Member**, Aerodynamic Measurement Technology Technical Committee, 2014-2017
  - **Member**, Fluid Dynamics Technical Committee, 2007-2013
  - **Vice Chair**, Experimental and Theoretical Fluid Dynamics Subcommittee, 2012-2013
  - **Member**, Experimental and Theoretical Fluid Dynamics Subcommittee, 2007-2013
  - **Member**, High-Reynolds-Number Roughness Discussion Group, 2007-2008
  - **Chair**, High-Reynolds-Number Roughness Discussion Group, 2008-2013
  - **Member**, Best Fluid Dynamics Paper Subcommittee, 2007-2013
  - **Member**, Microfluidics Working Group, 2008-2013
- **Member**, American Geophysical Union (2011-date)
- **Member**, American Society for Engineering Education (2002-09; 2018-date)
- **Member**, Tau Beta Pi and Pi Tau Sigma (1994-date)

### **External Professional Service (Partial list)**

- **Chair-Elect**, Provost Council, Association of Independent Technological Universities, 2024
- **Board of Directors**, Chicagoland Chamber of Commerce (Illinois Tech representative), 2022
- **Board of Directors**, The National Institute for Pharmaceutical Technology and Education, 2021-2024
- **Lead Organizer**, Midwest Mechanics Seminar Series, 2012-2022; Mentored next organizer in 2022
- **Member**, Alumni Board, Mechanical Engineering Department, University of New Mexico, 2012-2024
- **Panel Member**, 12 different NSF Review Panels (2007-2020)
- **Reviewer**, DOE, AFOSR, ONR, NSF Earth Sciences Division, Natural Sciences and Engineering Research Council of Canada, Netherlands Organization for Scientific Research
- **Academic Program Review**, Department of Mechanical Engineering, Univ. of New Mexico, 2018
- **Reviewer**, *J. Fluid Mech.*, *Nature Physics*, *Science*, *Phys. Rev. Fluids*, *Adv. Water Resour.*, *Water Resour. Res.*, *Phys. Fluids*, *Exp. Fluids*, *Environ. Fluid Mech.*, *J. Turbulence*, *AIAA J.*, *Meas. Sci. Tech.*, *Microfluid.*

*Nanofluid., J. Micromech. Microeng., J. Hydraulic Res., ASME J. Fluids Eng., ASME J. Heat Trans., ASME J. Appl. Mech., Intl. J. Heat Fluid Flow, Intl. J. Multiphase Flow, Exp. Mech., Intl. J. Thermal Sci., Smart Mater. Struct.,* among many others, 1996-date

- **Book Reviewer**, *AIAA Journal*, 2004, 2008
- **Reviewer**, many conferences and specialty workshops, 2004-date

### Department/College/University Service

- **Co-Chair**, Cost Savings, Efficiencies and Growth Task Force, Illinois Tech, 2023
- **Taskforce Lead**, TCS Digital Illinois Tech Initiative (Appointed), Illinois Tech, 2022
- **Member**, Strategic Envisioning Committee (Purpose Council Subcommittee; Appointed), Illinois Tech, 2021-2022
- **Faculty Advisor**, Society of Hispanic Professional Engineers Chapter (Volunteered), Illinois Tech, 2021-date
- **Member**, Lewis College of Science and Letters Dean Search Committee (Appointed), Illinois Tech, 2021-2022
- **Member**, Women's Center Advisory Board (Volunteered), Illinois Tech, 2020-2022
- **Member**, Deans Council (Deans & Provost), Illinois Tech, 2020-2022
- **Member**, Academic Council (Deans & Senior Acad. Affairs Leadership), Illinois Tech, 2020-2022
- **Member**, Presidential Search Faculty Advisory Committee (Appointed), Illinois Tech, 2021
- **Member**, COVID-19 Faculty Instructional Continuity Task Force (Appointed), U. Notre Dame, 2020
- **Chair (Ex-officio)**, Committee on Appointments, AME, U. Notre Dame, 2019-2020
- **Chair (Ex-officio)**, Committee on Reappointment, Promotion and Tenure, AME, U. Notre Dame, 2019-2020
- **Chair (Ex-officio)**, Committee on Appointments and Promotions, AME, U. Notre Dame, 2017-2019
- **Chair (Ex-officio)**, Executive Committee, AME, U. Notre Dame, 2017-2020
- **Member**, Provost Cabinet (as Provost Fellow), U. Notre Dame, 2017-2019
- **Member**, Foik Award Committee (Appointed), U. Notre Dame, 2017
- **Member**, Committee on Libraries (Appointed), U. Notre Dame, 2016-2017
- **Member**, Executive Committee (Dept. Chairs & Assoc. Deans), College of Engineering, U. Notre Dame, 2015-2020
- **Member**, College Council (College Leadership & Elected Dept. Faculty Representatives), College of Engineering, U. Notre Dame, 2015-2020
- **Member**, Executive Committee (Elected), AME, U. Notre Dame, 2015-2017
- **Member**, ad hoc Faculty Hiring Committee (Appointed), AME, U. Notre Dame, 2015-2017
- **Member**, Committee on Appointments and Promotions (All tenured faculty), AME, U. Notre Dame, 2014-2017
- **Member**, Aerospace Hiring Committee (Appointed), AME, U. Notre Dame, 2014-2016
- **Member**, Graduate Studies Committee (Elected, 2014-2017; as Dept. Chair, 2017-2020), AME, U. Notre Dame, 2014-2020
- **Member**, Undergrad. Curriculum Committee (Elected, 2014-2017; as Dept. Chair, 2017-2020), AME, U. Notre Dame, 2014-2020

- **Mentor**, Building Bridges Program (Volunteered), U. Notre Dame, 2014-2020
- **Chair**, Undergraduate Programs Committee (As Assoc. Dept. Head), MechSE, U. Illinois, 2012-2014
- **Member**, Faculty Recruiting Committee (Appointed, except 2012-2014 as Assoc. Dept. Head), MechSE, U. Illinois, 2005-2006, 2007-2014
- **Member**, Faculty Promotions Committee (As Assoc. Dept. Head), MechSE, U. Illinois, 2013-2014
- **Member**, Graduate Programs Committee (Appointed, except 2012-2014 as Assoc. Dept. Head), MechSE, U. Illinois, 2006-2010, 2012-2014
- **Member**, Graduate Admissions Committee (Appointed, except 2012-2014 as Assoc. Dept. Head), MechSE, U. Illinois, 2007-2010, 2012-2014
- **Ex-officio, Non-Voting Member**, Advisory Committee, MechSE, U. Illinois, 2012-2014
- **Member**, Advisory Committee (Elected), MechSE, U. Illinois, 2007-2011
- **Member**, Associate Dean for Undergraduate Programs Search Committee (Appointed), COE, U. Illinois, Fall 2013
- **Member**, Awards Committee (As Assoc. Dept. Head), MechSE, U. Illinois, 2012-2014
- **Member**, U. Illinois Faculty Senate (Elected), 2008-2010
- **Member**, Department Head Search Committee (Appointed), MechSE, U. Illinois, 2009
- **Chair**, ad hoc committee on College-Wide Fluid Mechanics Lab (Appointed), COE, U. Illinois, 2012
- **Co-Chair**, Disquisitiones Mechanicae Lecture Series (Fluids in Complex Environments), 2011-2012
- **Member**, ad hoc Committee on Undergraduate Mentoring (Appointed), MechSE, U. Illinois, 2009
- **Member**, ad hoc Space Allocation Committee (Appointed), COE, U. Illinois, Fall 2012
- **Member**, ad hoc Committee on Diversity (Volunteered), MechSE, U. Illinois, 2006, 2008
- **Faculty Advisor**, Pi Tau Sigma (Volunteered), U. Illinois Chapter, 2013-2014
- **Search Committees**, Various departmental staff positions (Appointed), MechSE, U. Illinois, 2011-2014
- **Lecturer**, School of Engineering Summer Bridge Program (Volunteered), U. New Mexico, Summer 2002, 2003
- **Member**, Faculty Search Committee (Appointed), Mechanical Engineering, U. New Mexico, 2003
- **Member**, Faculty Advisory Board (Volunteered), SOE Diversity Programs, U. New Mexico, 2002-2004

#### **Conference Organization (Partial list)**

- **Organizing Committee**, 15<sup>th</sup> International Symposium on Particle Image Velocimetry, 2023
- **Chair**, 14<sup>th</sup> International Symposium on Particle Image Velocimetry (Virtual), 2021
- **Organizing Committee**, 73<sup>rd</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics (Chicago, IL), 2020
- **Organizing Committee**, 10<sup>th</sup> International Symposium on Turbulence and Shear Flow Phenomena (TSFP-10), 2017
- **Advisory Committee**, Turbulence and Shear Flow Phenomena (TSFP) Symposium Series, 2016-date
- **Co-Chair**, 11<sup>th</sup> International Symposium on Particle Image Velocimetry, 2015
- **Steering Committee**, International Symposium on Particle Image Velocimetry, 2014-date
- **Scientific Advisory Committee**, International Symposium on Applications of Laser Techniques to Fluid Mechanics (Lisbon Conference), 2006-date

- **International Scientific Committee**, International Symposium on Flow Visualization, 2013-2019
- **Fluid Dynamics Track Chair**, 2012 AIAA Aerospace Sciences Meeting
- **Organizing Committee**, 2011 and 2013 AIAA Aerospace Sciences Meetings
- **Session Chair**, Numerous APS, AIAA and specialty conferences, 2002-date

**Scholarly Productivity:** Co-authored over 210 archival journal articles, book chapters, and peer-reviewed conference proceedings published in a wide range of journals and conference venues, including the top fluid mechanics and measurement journals; Co-authored 170+ unpublished presentations and posters at a broad range of annual research conferences and discipline-specific workshops (nearly all given by graduate students and postdocs advised/co-advised by KTC); Gave 60 invited research lectures at universities, research centers and/or conferences.

**Past and Current Research Funding:** Been affiliated with over \$30 million in research funding, with over \$6 million specifically allocated to KTC, from a broad range of funding entities, including: National Science Foundation, Air Force Office of Scientific Research, Office of Naval Research, Army Research Office, Department of Energy, Sandia National Labs, Government of Japan (through the International Institute for Carbon-Neutral Energy Research; I2CNER) and a number of industry partners.

**Mentee Research Advising:** 11 M.S. and 10 Ph.D. students graduated; 13 postdocs/visiting scholars supervised; currently advising/co-advising 1 Ph.D. student; also serving/served on 70+ additional Ph.D. dissertation committees; Six Ph.D. mentees placed in academic positions, others in research-centric industry positions.

**Classroom Teaching (average student ratings out of 10; student enrollment) \*\*Semester recognized as Excellent Instructor at Illinois**

- **ME 310 and TAM 335 (Introductory Fluid Mechanics; Undergrad. Course at Illinois):** Fall 2005 (5.9); Fall 2007 (9.0\*\*); Spring 2009 (9.0\*\*); Spring 2011 (9.0\*\*)
- **TAM 537 (Experimental Methods of Fluid Mechanics; Advanced Grad. Course at Illinois):** Fall 2004 (8.4); Spring 2008 (8.6); Spring 2010 (8.5); Spring 2012 (9.3\*\*)
- **TAM 532 (Viscous Flow; Adv. Grad. Course at Illinois):** Spring 2005 (8.8); Spring 2006 (9.4\*\*); Spring 2007 (9.5\*\*)
- **TAM 538 (Turbulence; Adv. Grad. Course at Illinois):** Fall 2006 (8.9\*\*); Fall 2008 (9.2\*\*); Fall 2009 (9.0); Fall 2010 (9.8\*\*); Fall 2012 (8.6)
- **AME 30331 (Fluid Mechanics; Undergrad. Course at ND):** Fall 2015 (9.0; 110 students); Fall 2016 (8.0; 157 students)
- **AME 70731/90931 (Viscous Flow Theory; Adv. Grad. Course at ND):** Spring 2015 (9.7; 5 students); Spring 2016 (9.2; 14 students); Spring 2018 (8.8; 16 students); Spring 2020 (19 students)