

# Oliver Stickel

*Fab Lab manager, researcher, founder*

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## Experience

<b>Self-employed researcher, consultant, educator.</b> Consultation work for organizations interested in Fab Labs, Makerspaces and Community Innovation Spaces. Public and private grant proposals. Teaching. Book project "Handbuch Fab Labs". Meta-Lab Rhein-Ruhr (in formation).	2015–today
<b>Lab leader.</b> I was involved in the setup of RUB-Makerspace as deputy general manager as well as lab leader for the Digital Lab and the Plastics Lab. RUB-Makerspace is a 2000sqm space with a team of 16 people and multiple (sub-)labs. Ruhr-Universität Bochum.	2020–2023
<b>Researcher, project manager, educator.</b> After graduating, I stayed at Uni Siegen to continue building Fab Lab Siegen into a sustainable infrastructure. Apart from the Lab, I worked on/in in different projects (see below), published and did a lot of teaching. University of Siegen.	2015–2019
<b>Guest researcher, consultant.</b> Field research, consultations and development of joint project proposals in/with collaborators from the Middle East. University of Birzeit, Univ. of Technology Oman, Goethe Institute, others, (mostly) Palestine.	2014–2019
<b>Founder and manager.</b> I founded Fab Lab Siegen and managed it on its journey from a student initiative in a literal storage room on campus outside the city through many locations to a big, wonderful, colorful, open and community-oriented space with a funded team and filled with people, ideas, tools and machines right in the city center. Siegen.	2013–2019
<b>TA, student researcher.</b> Teaching assistant (mostly in HCI), research assistant (mostly with qualitative field work), IT and media tech support/maintenance. Universities of Siegen and Duisburg-Essen.	2009–2015

## Education

<b>Dissertation work</b> - About Fab Labs and Makerspaces as public infrastructure. University of Siegen and self-employed.	2015–today
<b>M.Sc. Human Computer Interaction</b> (honors) - Socio-technical systems design based on qualitative methods. University of Siegen.	2012–2015
<b>B.Sc. Applied Cognitive and Media Sciences</b> - Computer Science and Psychology (without advanced engineering and clinical aspects), grounded in quantitative methods. University of Duisburg-Essen.	2009–2012

## Community roles

I (co-)chaired Fab:UNiverse - the conference of Fab Lab managers at German universities - multiple times and help maintain its website. I've also (co-)organized many gatherings such as temporary (Maker)spaces at other events or meetups like the World Usability Day Siegen (2014-2018). In academic service, I was reviewer/chair for conferences and journals like CHI, JCSCW, C&T or M&C. Occasionally, I've been asked to join committees, mostly on (community) innovation spaces or student issues. I've also been an elected member of different bodies of (self)-governance such as the Senate commission on Strategic University Development and

examination boards at Uni Siegen or head of the student representatives ("Fachschaftsräte") at Uni Duisburg-Essen and Uni Siegen respectively.

**Memberships:** Verbund Offener Werkstätten, Fab Lab network, Chaos Computer Club, ver.di. **Past:** UPA, GIG, Hasi, GI.

## Teaching

I enjoy teaching and learning a lot. I've always made it a point to try and be open in teaching and have frequently had students from other faculties or external guests in my seminars.

At Uni Siegen, I've been responsible for most elements of the annual mandatory introduction to Human Computer Interaction for many years. This included lectures and mentoring up to 40 students per iteration through big, semester-long projects ending in submissions to and wins in national student challenges. Additionally, I've held many different seminars ranging from reading classes on literature about "Making" to very practical seminars on rapid prototyping methods.

At Ruhr-Uni Bochum, I was less involved in structured, academic teaching but taught and learned whatever was needed to help many different Makerspace community members from (many different) disciplines with their - many different - projects.

As a thesis advisor and co-advisor, I have accompanied about 8 Bachelor and Master Students along their paths to graduation. Topics have varied from participatory-design-oriented field investigations to studies about Makerspaces in teacher training to engineering and fabrication of additive tools for industrial processes. Additionally, I've been involved in co-advising state-certified technicians as a pilot project between a university and a technical vocational college. Occasionally, I've contributed to revisions of examination regulations and similar regulatory structures.

I've also developed and held lots of safety and infrastructure introductions.

## Skills in Keywords

**Making** - Makerspace operation / management / safety. Rapid Prototyping (many different methods), CAD/CAM, general (basic) coding, (traditional) web development, electronics and integrated systems for rapid prototyping, basic skills in different crafts / workshop and lab areas.

**Human Centered Design** - UX design, HCI, usability methods, design thinking, convergence of agile and user centered methods.

**Projects and People** - Project development, social innovation, fundraising, agility / Skunkworks, community and team development, operations (with)in public service and public administration.

**Methods** - Constructionism, human-centered teaching and learning, mixed-methods, action and field research, participatory methods and participatory action research, (Maker-)space(s) as a method.

## Personal

Birth date: 12 June 1987

German: native, English: fluent, French: rudimentaire, Latin: obliviscebam.

I enjoy camping, water, (working on) motorbikes, cooking and books.

## Projects and funding

**Maker in Residence** is an effort at RUB-Makerspace to invite Makers from different disciplines to share knowledge. I co-led the first two funding rounds and managed the 2023 residency.

Regional donors, 20-40.000€ p.a.

2023-today

**MentorINN** is a project between three universities to found Ruhr School of Design Thinking, to support Design Thinking in academic teaching and to

2022-2024

share course material. I was part of the proposal team and occasionally helped in the project. Stiftung Innovation in der Hochschullehre ('foundation for digital teaching in academia'), about 20.000€.	
<b>SMAPS</b> - the center for smart production systems - was a research-infrastructure project on additive fabrication and smart systems for industrial tooling (mainly forming processes). I was part of the proposal team and briefly involved in the ramp-up and procurement phase. European EFRE-fund (EFRE.NRW), about 3m€.	2019-2022
<b>FAB 101</b> was a research project of four German universities on Fab Labs in academia. It focused on cooperation, tools, education and infrastructure. I developed the core idea, led the proposal, was project manager and part of the operative team. Federal Ministry of Education and Research, about 1.2m€.	2017-2020
<b>YALLAH</b> - "You All Are Hackers" was a student exchange / hackathon project. Students from Palestine and Germany visited each other and worked on socio-economical issues and art using "maker-methods" (info slides from 2017). I developed the core idea after my own visits to Palestine as a student, led the proposal and helped recruit and set up the staff who took over. German Academic Exchange Service (DAAD), about 225.000€.	2016-2018
<b>ZEIT.RAUM Siegen</b> was a project between a museum, three university chairs and Fab Lab Siegen to develop a 3D-printed, interactive city model and a regional Wiki for a museum installation. I coordinated the ideation phase, wrote most of the proposals, was part of the negotiation team, built the first prototypes for model and wiki and recruited the project staff. Regional societies, University of Siegen, other sources, about 190.000€ (funding brochure I designed).	2016-2018
<b>Internet-Cafe4Refugees</b> was a project we set up when Uni Siegen housed hundreds of refugees. We provided tech support, hardware and internet connection together with the local freifunk.net community. Volunteer work, hardware donations and enough local funding for student aids to cover daily opening hours.	2015-2016
<b>Fab Lab Siegen</b> was my baby for many years and my first real experience in regards to being a founder and the world of fundraising. My old team is still running and growing the Lab and it has become local infrastructure. Calls for student projects, donations, other sources, about 100.000€ in money and more in hardware donations during the first three years. Later, funding strategies changed when the project became official university infrastructure. The spaces for the lab were and are co-sponsored by private-public partnerships.	2013-today
<b>CUBES</b> was a research project on community-based innovation in software and usability for small and medium sized enterprises. I was involved as a student, then researcher, then (interim) project manager for the project reporting and closing. Federal Ministry for Economic Affairs and Energy, about 800.000€.	2012-2015

## Awards and honors

<b>Honorable Mention Paper Award</b> , "Mensch und Computer" (M&C) conference for Praktiken der Nutzerintegration im Entwicklungsprozess von KMU (see below), German Informatics Society (GI).	2015
<b>Arthur-Woll award</b> for an exemplary master thesis , University of Siegen and association for the support of the economic faculty.	2015
<b>pwc award</b> for best graduate of the faculty, University of Siegen and PricewaterhouseCoopers.	2015
<b>Scholarship</b> Tallinn Summer School on research methods in Human-Computer interaction, University of Siegen.	2014
<b>First Prize</b> "Student Usability Challenge" for Social Flashcards, German Informatics Society (GI).	2013

- Handbuch Fab Labs: Einrichtung, Finanzierung, Betrieb, Forschung & Lehre** by Iris Bockermann, Jan Borchers, Anke Bocker, Marcel Lahaye, Antje Moebus, Stefan Neudecker, Oliver Stickel, Melanie Stilz, Daniel Wilkens, René Bohne, Volkmar Pipek, Heidi Schelhowe. Bombini-Verlag. 2021
- shARe-IT: Ad hoc Remote Troubleshooting through Augmented Reality** by Thomas Ludwig, Oliver Stickel, Peter Tolmie, Malte Sellmer. Journal on Computer Supported Cooperative Work 30, pp. 119–167. 2021
- Fab:UNiverse - Makerspaces, Fab Labs and Lab Managers in Academia** (slides) by Oliver Stickel, Melanie Stilz, Anke Bocker, Jan Borchers, Volkmar Pipek. Workshop at Fab Learn Europe Conference '19. 2019
- Fab Lab Education in German Academia** by Oliver Stickel, Anke Bocker, Melanie Stilz, Antje Möbus, Iris Bockermann, Jan Borchers, Volkmar Pipek. Proceedings from the Fab14 Conference '18, pp. 39-46. 2018
- Praxisorientierte Projektstudie zur transdisziplinären Entwicklung innovativer Produkte** by Oliver Stickel, Stefan Krick, Timo Scherer, Tamara Reinicke, Volkmar Pipek. Poster for a regional conference on innovations in teaching. 2018
- Fab Labs and Interdisciplinary Academic Teaching: A research agenda** (poster) by Oliver Stickel, Melanie Stilz, Volkmar Pipek. Proceedings from the Fab Learn Europe Conference '18, pp. 104-105. 2018
- Computerclubs und Flüchtlingslager - Ein Diskussionsbeitrag zur Forschungs- und Bildungsarbeit aus praxistheoretischer Perspektive** by Oliver Stickel, Konstantin Aal, Marén Schorch, Dominik Hornung, Alexander Boden, Volker Wulf, Volkmar Pipek. In: Langreiter, N., Löffler, K. (eds.) - Do it! Yourself? Fragen zu (Forschungs-)Praktiken des Selbermachens. transcript. 2017
- 3D printing/digital fabrication for education and the common good** by Oliver Stickel, Konstantin Aal, Verena Fuchsberger, Sarah Rüller, Victoria Wenzelmann, Volkmar Pipek, Volker Wulf, Manfred Tscheligi. Workshop at Communities & Technologies conference '17. 2017
- MuC-Makerspace: Academic practices in Community Innovation and (Digital) Fabrication** by Oliver Stickel, Melanie Stilz, Volkmar Pipek. Workshopband der Mensch & Computer Konferenz (MuC) '17. 2017
- User Integration in Agile Software Development Processes: Practices and Challenges in Small and Medium Sized Enterprises** by Oliver Stickel, Corinna Ogonowski, Timo Jacobi, Gunnar Stevens, Volkmar Pipek, Volker Wulf. In: Cockton, G., Lárusdóttir, M., Gregory, P., Cajander, Å. (eds) - Integrating User-Centred Design in Agile Development. Springer. 2016
- Infrastructuring & Digital Fabrication** by Oliver Stickel, Volkmar Pipek. In: Mayr, H., Pinzger, M. (eds.) - INFORMATIK 2016, Lecture Notes in Informatics (LNI). Gesellschaft für Informatik. 2016
- Usability Quartett (Neuaufgabe und Erweiterung)** by GermanUPA, Oliver Stickel, Alisha Tilsner, Elisabeth Schwerdtner, Susanne Speh, Cindy Waldinger. Method Cards, GermanUPA (see pitch). 2016
- Report series for SME on understanding users (1, 2, 3)** by Oliver Stickel, Sebastian Draxler, Volkmar Pipek et al. Wissenschaft trifft Praxis by "Mittelstand Digital". BMWI / BMWK. 2016
- 3D Printing with Marginalized Children – An Exploration in a Palestinian Refugee Camp** by Oliver Stickel, Dominik Hornung, Konstantin Aal, Markus Rohde, Volker Wulf. Proceedings of the 14th European Conference on Computer Supported Cooperative Work (ECSCW) '15, pp. 83-102. 2015
- Appropriating digital fabrication technologies—a comparative study of two 3d printing communities** (slides) by Thomas Ludwig, Oliver Stickel, Alexander Boden, Volkmar Pipek, Volker Wulf. Proceedings of the iConference '15. 2015
- Praktiken der Nutzerintegration im Entwicklungsprozess von KMU** (slides) by Oliver Stickel, Corinna Ogonowski, Timo Jakobi, Gunnar 2015

- Stevens, Volkmar Pipek, Volker Wulf. Tagungsband der Mensch & Computer Konferenz (MuC) '15, pp. 103-112.
- Die richtige Frage zur richtigen Zeit: Ereignisbedingte Fragebogen-Studien mittels und über Smartphone-Apps** by Julian Dax, Thomas Ludwig, Oliver Stickel, Volkmar Pipek. Workshopband der Mensch & Computer Konferenz (MuC) '15. 2015
- 3D Printing as a Means for Participation in Developmental Settings - A Field Study** by Oliver Stickel, Dominik Hornung, Sarah Rüller, Volkmar Pipek, Volker Wulf. Proceedings of the Participatory Innovation Conference (PIN-C) '15. 2015
- Educating the next generation of Makers - 3D Printing with marginalized refugee children: Exploring Making and digital fabrication from a HCI perspective through an exploratory field study in refugee camps in the West Bank.** My master thesis at the institute for Information Systems and New Media & the CSCW research group, University of Siegen. 2015
- (Open) Usability Method Toolkit.** Open library of Usability and User Experience methods, originally in German as "CUBES-Methodenfinder". Has since been expanded on and translated by students at Fab Lab Siegen. 2015
- Bottom-Up Kultur in Siegen: Ein Bericht über aktuelle Strukturen, Entwicklungen und Umnutzungsprozesse** by Oliver Stickel, Alexander Boden, Gunnar Stevens, Volkmar Pipek, Volker Wulf. In: Habscheid, S., Hoch, G., Schröteler-v. Brandt, H., Stein, V. (eds.) - DIAGONAL Jahrgang 2014: Umnutzung - Alte Sachen, neue Zwecke. V&R unipress. 2014
- Beteilige Deine Nutzer! Fallstudie eines systematischen Vorgehens zur Integration von Nutzer-Feedback in agilen Entwicklungsprozessen** by Sebastian Draxler, Oliver Stickel, Frank Rosswog, Gunnar Stevens. Wissenschaft trifft Praxis by "Mittelstand Digital", issue on User Experience - Positives Erleben betrieblicher IT, pp. 36-45. BMWI / BMWK. 2014
- Towards Sociable Technologies: An Empirical Study on Designing Appropriation Infrastructures for 3D Printing** by Thomas Ludwig, Oliver Stickel, Alexander Boden, Volkmar Pipek. Proceedings of the Designing Interactive Systems Conference (DIS) '14, pp. 835-844. 2014
- Computer supported urban gardening** (poster) by Oliver Stickel, Thomas Ludwig. Proceedings of the Designing Interactive Systems Conference (DIS) '14, pp. 77-80. 2014
- Nutzerintegration in Softwareprojekte durch Multi-Channel Feedback.** by Sebastian Draxler, Oliver Stickel, Dominique Winter, Gunnar Stevens. Tagungsband der Mensch & Computer Konferenz (MuC) '14, pp. 175-184. 2014
- Playful, collaborative approaches to 3D modeling and 3D printing** (poster) by Thomas von Rekowski, Alexander Boden, Oliver Stickel, Dominik Hornung, Gunnar Stevens. Tagungsband der Mensch & Computer Konferenz (MuC) '14, pp. 363-366. 2014
- Computer im Grünen: IT-Systeme zur Unterstützung urbaner Gärten** by Oliver Stickel, Thomas Ludwig, Volkmar Pipek. Tagungsband der Mensch & Computer Konferenz (MuC) '14, pp. 303-306. 2014
- 3D Printers as Potential Boundary Negotiating Artifacts for Third Places** (slides) by Thomas Ludwig, Oliver Stickel, Volkmar Pipek. Workshop Proceedings of the Designing Interactive Systems Conference (DIS) '14. 2014
- Come\_in@ palestine: adapting a german computer club concept to a palestinian refugee camp** by Konstantin Aal, George Yerosus, Kai Schubert, Dominik Hornung, Oliver Stickel, Volker Wulf. Proceedings of the conference on Collaboration Across Boundaries (CABS): culture, distance & technology '14, pp. 111-120. 2014
- Customer Feedback and UCD in Agile Software Development** by Oliver Stickel, Sebastian Draxler, Gunnar Stevens. Workshop Proceedings of the NordiCHI '14. 2014
- Come\_IN: Expanding Computer Clubs Towards Tinkering and Making** by Oliver Stickel, Dominik Hornung, Volkmar Pipek, Volker Wulf. Workshop 2014

Proceedings of the NordiCHI '14.

- Page navigation in touch based interfaces.** My bachelor thesis at the Interactive Systems research group, University of Duisburg-Essen. 2012
- Tu nicht so erwachsen!** by Filip Bubenheimer, Oliver Stickel (eds.) et al. Graduation book. Self-published (300pcs). 2006
- XESCOE - x-tendable environment for soundcard operated experiments** (user handbook, slides) by Benedikt Rudolph, Oliver Stickel, Niklas Reisser. Land Baden-Württemberg at Landesbildungsserver (went offline in 2019). 2005

## Unpublished work

These might or might not be continued at some point. Thoughts and feedback are welcome!

Towards a conceptual model of HCI and Making

HCI motivations for establishing, positioning and operating a Fab Lab

Poster draft on HCI and Fab Labs

On self-expression through 3D printing / digital fabrication

Literature review draft on Fab Labs and Makerspaces in academia

On better interfaces for (educational) 3D modeling tools

Der große Bruder in uns?

Study proposal on the institutionalization of shared machine shops

Proposal for a cultural probe study about domestic digital fabrication

## Talks & slides

- Like most real work, the materials linked here have not been created alone. Thank you to all collaborators!
- Introduction to soldering 2023
- General (safety) introduction to RUB-Makerspace German / English
- Build your own air quality sensor (web-view) 2022
- Introduction to Mixed Reality
- Microcontroller Basics (web-view)
- Introduction to CAD (two days)
- Introduction to measuring for electronics
- Introduction to making PCBs
- Introduction to CNC milling
- How to develop workshops in/for Makerspaces 2021
- Safety instructions Digital Lab (web-view)
- Insights into RUB-Makerspace (Q&A and 360-tour through RUB-Makerspace at Aachen Maker Meetup)
- WTF is Fab Lab (Siegen)? (extended version: What is a Fab Lab) 2019
- Prototyping with Arduino (semester-long seminar, English)
- Makerspaces, Fab Labs and Lab Managers in Academia
- Das Schaffen in Fab Labs
- Fab Labs and additive manufacturing seminar session 2018
- Socio-Informatics guest lecture for Current Topics in Media Computing and Human-Computer Interaction at RWTH Aachen (podcast)
- Project FAB101 2017
- Project ZEIT.RAUM Siegen
- Wissenschaftstheorie
- Children's university talk on how to make stuff
- Introduction to HCI (semester-long lecture & tutorial): German / English
- Fab Lab Siegen 2016
- Interaction Design with Arduino (semester-long seminar, German)
- Workshop on Usability & User Experience: one day / two days 2015
- 3D printing (semester-long seminar, German)
- Making@Palestine lightning talk & 3D printing for beginners workshop at



re:publica 2016	
Industrie 4.0 meets Making	
Appropriating digital fabrication: A comparative study of two 3D printing communities	
Praktiken der Nutzerintegration im Entwicklungsprozess von KMU	
Makers at Palestine (talk at Hackspace Siegen, among others)	2014
Video of a talk about Fab Lab Siegen at WUD Siegen 2014	
3D printers as boundary (negotiating) artifacts	
Social Flashcards learning app concept	2013
Synchronous and asynchronous collaboration	
HackDock - a 3d printed Macbook accessory	
KUSi - launch of the Siegen usability competence center	
Tutorial development for an exergame for the elderly	
HCI-Lab Siegen (predecessor of Fab Lab Siegen)	
On Fab Labs (Handout)	
Clifford Nass - the man who lied to his laptop	2012
John Dewey - art as experience	
On User Experience	
Educational game prototype "Food Balance" (poster)	2011
Cindy Sherman	
Pathological Internet Use	
3D animation project "Star Trek TOS" (the animation)	
OpArt	2010
Das (schwarze) Quadrat	
The perfect thing - Imco lighters	
(Web-)Typografie (Handout)	

## Additional links

**Other files:** Linked files from above and more are available here.

[makerspace.rub.de](https://makerspace.rub.de/) / on GitLab / video tour

[fablab-siegen.de](https://fablab-siegen.de/) / on GitHub / **videos:** 2018 - on Campus / 2020 - "Herrengarten" / 2023 - current space / 2021: Interview with Fab Lab Siegen's community manager

[fab101.de](https://fab101.de/) / on GitHub

[fab-universe.de](https://fab-universe.de/) / on GitHub

[yallah.exchange](https://yallah.exchange/) / [exhibition.yallah.exchange](https://exhibition.yallah.exchange)

WAZ news article on RUB-Makerspace at Mark51/7

"Nachtbetrieb auf Mark 51/7" with a look at RUB-Makerspace on pp. 8-9

Interview "Deutsche Welle" about Fab Labs

WP news article on 3D printing with children

News article on working with refugees at Fab Lab Siegen

Interview "Deutschlandfunk Kultur" on Makers

Usability Method Finder

World Usability Day Siegen

My old blog posts on the Fab Lab Siegen website